

REMARKS

Claims 1 and 10 have been amended to correct typographical errors. Claim 25 has been rewritten in independent form. Claims 2 and 19 have been amended to conform to the language of their respective base claims. Claims 22, 23, and 26-28 have been amended to change their claim dependencies. Claims 11 and 29 have been amended to clarify what Applicant regards as the invention. New claims 34-36 are based at least on former claims 31-33. Support for new claims 37-39 can be found at least on page 18, lines 1-20 of the specification. No new matter has been added.

I. CLAIM REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 31-33 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 31-33 have been canceled.

II. CLAIM REJECTIONS UNDER U.S.C. § 102/103

Claims 1-7, 9-19, 21-28, and 31-33 stand rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent No. 6,307,914 (Kunieda). Claim 29 stands rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,621,889 (Mostafavi). Claim 21 has been canceled. With respect to the remaining claims, Applicant respectfully notes that in order to sustain a rejection under §102, each element in the rejected claim must be found, either expressly or inherently, in the cited reference.

Claims 1-10

Claim 1 recites *establishing a relationship of at least one marker relative to a target*. Claim 10 recites a similar limitation. Kunieda does not disclose or suggest such limitation. Rather, Kunieda teaches placing markers inside a patient at a target, thereby obviating the need to establish a relationship of the marker relative to the target (See column 6, lines 56-62, and figures 1, 2, 7, 8, 10-12, and 19-22). There is nothing in Kunieda that discloses or suggests establishing a relationship of a marker relative to a target. As such, claims 1 and 10 are believed allowable over Kunieda. For at least the same reasons that claim 1 is allowable over Kunieda, claims 2-9, which depend from claim 1, are also believed allowable over Kunieda.

Claims 11-20

Claim 11 recites a control module that generates a beam adjustment signal for controlling the first multiple leaf collimator to *track* a movement of a target in response to a first image signal. Kunieda does not disclose or suggest such control module. Rather, Kunieda only discloses “opening” or “closing” a collimator in response to target movement (See Column 4, lines 6-11, and Column 16, lines 13-37). There is nothing in Kunieda that discloses or suggests controlling a multiple leaf collimator to *track* a movement of a target. As such claim 11 is believed allowable over Kunieda. For at least the same reason that claim 11 is allowable over Kunieda, claims 12- 20, which depend from claim 19, are also believed allowable over Kunieda.

Claims 22-28

Claim 25 recites *superimposing a tracking signal on a radiation treatment plan for a tumor*, and generating a beam adjustment signal using the radiation treatment plan with the tracking signal superimposed thereon. Kunieda does not disclose or suggest such limitation. Rather, Kunieda discloses sending a beam enable signal to a linac irradiating control section 23 when it is determined

that a coordinate of a tumor lies within a predetermined range (column 9, lines 11-29). There is nothing in Kunieda that discloses or suggests a radiation therapy process that includes superimposing a tracking signal on a radiation treatment plan. For at least the foregoing reason, claim 25, and its dependent claims 22-24 and 26-28 are believed allowable over Kunieda.

Claims 29 and 30

Claim 29 recites *using a collimator to adjust a radiation beam* based at least in part on a plurality of images collected at a plurality of phases in a cycle. Mostafavi does not disclose or suggest such limitation. Rather, Mostafavi teaches activating and deactivating a radiation beam based on a detected physiological motion (See column 5, line 39 to column 6, line 30, column 8, lines 40-67, and figures 3, 4, and 9). As such claim 29 and its dependent claim 30 are believed allowable over Mostafavi.

Claims 34-39

Claims 34-36 are believed allowable for at least the reason that none of the references made of record discloses or suggests using an anatomy of a patient as a marker. Claims 37-39 are believed allowable for at least the reason that none of the references made of record discloses or suggests creating a treatment plan based at least in part on a plurality of images indicating a location of a target relative to an internal marker.

III. INFORMATION DISCLOSURE STATEMENTS

Applicant wishes to bring to the attention of the Patent Office the references listed on the attached IDSs, which were previously submitted on August 2, 2002, August 27, 2002, March 4, 2003, and March 17, 2003, and requests that they be considered by the Examiner.


CONCLUSION

Based on the foregoing, all remaining claims are believed in condition for allowance. If, the Examiner has any questions or comments regarding this amendment, please contact the undersigned at the below-listed number.

Respectfully submitted,

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Enclosures: Copies of previously submitted IDSs.